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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,908	11/18/2003	John Long	LONG=23B	3990

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EXAMINER

MYERS, ADAM C

ART UNIT	PAPER NUMBER
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1761

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,908

Applicant(s)

LONG ET AL.

Examiner

Adam C. Myers

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 1 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/18/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: in paragraph 12, line 2, the word "an" should be "a".

Appropriate correction is required.

Claim Objections

Claims 1 and 8 are objected to because of the following informalities: the word "non-compressable" appears to be a typographical error. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-13 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification does not appear to mention killing microbes by way of shockwave treatment.

Claims 1 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims recite the limitation "approximately the

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same." It is not clear to what degree of difference in impedance would satisfy this limitation.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 5, and 8-9 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-35 of U.S. Patent No. 6,669,546. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the patent and the application have the same assignee, and the invention disclosed by the claims of patent '546 provide enablement to an invention over which the application is unpatentable. The crux of the prior art is the treatment of meat by a shockwave, the shockwave traveling through a non-compressible fluid, a solid layer having impedance that is approximately the same as the non-compressible fluid, and the meat that is separated from the non-compressible fluid by the solid layer. The meat is further restrained during treatment along the side away from the solid layer and along the sides. The feature of the patent

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and the application that is not identical, i.e. the wave traveling upward in the patent versus downward in the application, is not patentably distinct, because the invention of the patent can be rotated 180° and still perform the function of the invention, and would now be identical to the limitation of the application. Such a feature has been taught by Wesley, in which a method for shock wave treatment of meat comprises a shock wave being created by a pair of electrodes, and propagating downward through a non-compressible fluid, through a solid layer having an impedance approximately the same as the non-compressible fluid, and through the meat, thus treating the meat. Since both references of prior art teach the treatment of meat by shock wave, it would have been obvious to configure the shock wave to propagate upwards or downwards, so long as the wave propagated through the meat so that the meat could be treated.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 5, and 8-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Wesley et al (US Pat 3,594,115). Wesley et al has taught a method and an apparatus for bacteria destruction. As will be detailed below, the method and apparatus disclosed by Wesley would inherently anticipate the tenderizing of meat, since the features of the invention anticipate the technical limitations of the claims.

Wesley has disclosed a method for destroying bacteria, the method comprising placing meat (ID 119 and col. 1, lines 51-53) in a chamber (ID 11, 57, 65), sealing the chamber with a moveable lid (ID 17, 71), discharging electric current between a pair of electrodes (ID 25, 81 and 27, 83) to create a shockwave (Abstract, col. 4, lines 28-35) that is propagated through a non-compressible fluid, i.e. water (ID 121, col. 2, lines 14-15). In one embodiment, the meat is placed adjacent a diaphragm (ID 79) being made of a plastic (col. 2, lines 68-70). The impedance of plastics and water are inherent properties, well known to be approximately equal. The water is adjacent to a second side of the diaphragm (Fig. 5), the diaphragm being disposed between the meat and the water. The meat is restricted to an area defined by sidewalls (ID 13, 67) and bottom wall (ID 15, 69) when the meat is subjected to the shock wave, the wave in one embodiment (Fig 5) the shock wave passing through the water, the diaphragm, and then through the meat. Wesley has further disclosed that the meat is confined and tightly sealed within the chamber by a pair of valves (ID 47, 95 and 49,93; col. 4 59-62).

The above disclosure anticipates all the limitations of the instant claim 1.

In regard to claim 5, Wesley has disclosed that the diaphragm (ID 79) is located above the meat and the shock wave passes downwardly through the diaphragm and into the meat (Fig. 5).

In regard to claim 8, the limitations of the claim have been anticipated by Wesley, the limitations of the instant claim having been presented above for claims 1 and 5.

In regard to claim 9, Wesley has disclosed an apparatus comprising a chamber (ID 11, 57, 65) containing an incompressible fluid (water, col. 2, lines 14,15) having a

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first acoustic impedance, and a device for generating a shock wave (ID 25, 81 and 27, 83) within the incompressible fluid. The apparatus, in one embodiment, further comprises a diaphragm (ID 79), one surface in contact with the incompressible fluid, and the opposite side in contact with a food to be treated within a chamber (ID 73). Also, "contacting the meat" is a method of using the apparatus, and thus does not provide a patentable feature of an apparatus. The patentability of an apparatus is only defined by the physical features of the invention, not the use of said apparatus. The diaphragm is made of plastic (col. 2, lines 68-70), plastic having impedance approximately equal to the impedance of the incompressible fluid. Wesley has also disclosed a structure for restraining the movement of the food when subjected to the shock wave, the structure comprising sidewalls (ID 13, 67) and a bottom wall (ID 15, 69). The diaphragm and a chamber holding the incompressible fluid are disposed above the food to be treated in a lower chamber (Fig. 5).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2-4, 6-7, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wesley et al in view of Long et al (US Pat 6,224,476). Wesley is taken as cited above. Additionally, Wesley has disclosed that the top, bottom, and walls are made of a proper thickness to withstand a high intensity shock wave and high-pressure build-up. First, in regard to claims 2-4, Wesley does not recite a metal top or bottom, sidewalls being made of a material substantially transparent to the shockwave or being made of metal, and end walls that made of metal. Long has disclosed a method of processing food with shock waves. The method comprises pumping food through a conduit (ID 100) as a shock wave is created by wave producing means (ID 200) and reflected downward through an incompressible liquid, i.e. water, toward the conduit by a steel hemispheric container (ID 310, col. 3, lines 12-15). Long has further disclosed that the conduit is made of a material that transmits sound at a similar speed as water. Long discloses polyurethane is such a material.

Now, in claims 2 and 4, where the limitations of the walls, top, bottom being made of metal, Wesley has taught the walls need to be sufficiently thick to withstand the shock wave and the high pressure. Wesley does not recite the material of the walls being metal. Long has disclosed that metal is used for the purpose of maintaining the shock wave, and it also reflects the shockwave back inward and toward the food. Given Wesley has already given motivation for proper reinforcement of the walls, it would have been obvious to one of ordinary skill in the art to incorporate the metal walls of Long into

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the invention of Wesley, since both are directed to the shock wave treatment of food. Since Wesley already included walls with proper thickness to withstand high intensity shock waves and high pressure and since the steel walls of Long provided a strong container and a reflective surface for directing the shockwave, and thus a greater degree of reinforcement for the container of Wesley.

In regard to claims 2 and 3, in which the sidewalls are composed of a material that is substantially transparent to the shockwave; the material being polyurethane, Wesley has taught sidewalls being sufficiently thick to withstand a high intensity shock wave and high-pressure build-up, along with a diaphragm being constructed of a material having similar impedance to water. Wesley does not recite that the sidewalls are constructed of polyurethane. Long has taught a polyurethane conduit that allows for the passing of a shock wave into the conduit for the treatment of food being pumped through the conduit. Given polyurethane sidewalls would allow for the passage of the shockwave through the sidewall and out of the container, it would have been obvious to one of ordinary skill in the art to construct the sidewalls of Wesley of the polyurethane material taught in Long. Both inventions are directed to method for treating food by shock wave, and since Wesley already took precautions for the high-pressure build resulting from the shock wave, incorporation of the polyurethane walls would allow for the passage of some of the shock wave energy, and thus reduce the risk associated with high pressure spikes disclosed by Wesley.

In regard to claims 6 and 7, Wesley has disclosed the diaphragm is located above the food to be treated, and the shock wave passes downwardly through the diaphragm and into the meat.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wesley in view of Long et al and in further view of Hodges et al (US Pat 4,135,002). Wesley and Long are taken as cited above. The combination of references teach a method for treating a food product with a shock wave, with Long having taught the obvious technical feature of metal walls for the purpose of shock wave energy and pressure containment. The technical features stated prior to the improvement in the instant claim 10 have been outlined above in the rejection of claim 9. The references, individually or in combination, do not recite the limitation of movable end walls. Hodges has taught an apparatus for strip cutting raw potatoes. The apparatus comprises a conduit (17), through which a food product passes for treatment, the conduit comprising movable opposing walls (18, 19), and the walls are capable of altering the volume within the conduit from a maximum (complete flow through) to a minimum (zero flow through). By moving the opposing walls (18, 19), the food product passing through the conduit is focused toward the means treating the food product. The direct treatment provides a more consistently treated food product. Therefore, it would have been obvious to one of ordinary skill in the art to incorporate multiple moveable walls of Hodges into the combined invention of Wesley and Long since the combined invention has disclosed a method for treating food by shock wave treatment and the resulting high pressure, and means for controlling the pressure within a shock wave treatment chamber. The

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opposing moveable walls would provide the combined invention with control of the volume within the treatment chamber, providing a more direct treatment of the shock wave, along with a higher degree of pressure produced by the shock wave, and thus greater ability to destroy bacteria.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wesley et al in view of Long et al and in further view of Long (US Pat 6,669,546). Wesley and Long are taken as cited above. The references, individually or in combination, do not recite an air gap provided downstream of the meat from the direction of travel of the shock wave, thus producing a rarefaction wave. Long '546 has disclosed a shock-wave meat treatment, the treatment comprising placing meat in a treatment chamber (ID 14), releasing a shock wave from a pair of electrodes (ID 124), having the shock wave propagate through a discharge chamber (ID 12), through a solid plate (ID 16), and into the meat being held in the treatment chamber. After passing through the meat, the shock wave continues on its path until hitting an air cavity (ID 146) having a steel plate (ID 145) on the downstream side of the shock wave's movement. The air cavity, being about 2 cm, produces a rarefaction wave that is then reflected back in the direction of the meat, further treating the meat. Thus, it would have been obvious to one of ordinary skill in the art to incorporate the air cavity of Long '546 into the combined invention of Wesley and Long, since both the invention of Long and the combined invention are directed to the shock wave treatment of meat, and since the air cavity would produce a rarefaction wave that will further treat the meat upon reflection of the rarefaction wave

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back in the direction of the meat (Abstract, col. 10, line 65 to col. 11, line 9 and col. 12, lines 18-41).

Claims 12 and 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wesley et al in view of Long ('546). Wesley is taken as cited above. The reference does not recite an air gap provided downstream of the meat from the direction of travel of the shock wave, thus producing a rarefaction wave. Long '546 has disclosed a shock-wave meat treatment, the treatment comprising placing meat in a treatment chamber (ID 14), releasing a shock wave from a pair of electrodes (ID 124), having the shock wave propagate through a discharge chamber (ID 12), through a solid plate (ID 16), and into the meat being held in the treatment chamber. After passing through the meat, the shock wave continues on its path until hitting an air cavity (ID 146) having a steel plate (ID 145) on the downstream side of the shock wave's movement. The air cavity, being about 2 cm, produces a rarefaction wave that is then reflected back in the direction of the meat, further treating the meat. Thus, it would have been obvious to one of ordinary skill in the art to incorporate the air cavity of Long '546 into the invention of Wesley, since both are directed to the shock wave treatment of meat, and since the air cavity would produce a rarefaction wave that will further treat the meat upon reflection of the rarefaction wave back in the direction of the meat (Abstract, col. 10, line 65 to col. 11, line 9 and col. 12, lines 18-41).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam C. Myers whose telephone number is 571-272-6466. The examiner can normally be reached on Monday-Friday, 8am-4: 30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Acm

Adam C Myers

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PRIMARY EXAMINER
10-27-05